

# WHAT IS CLAIMED IS:

1. Process for controlling an electronic power component comprising a process for piloting the opening and/or closure of the electronic power component, the piloting process comprising a plurality of steps for controlling the application of a succession of different commutation voltages on a control electrode of said component between the instant when the piloting process begins and the instant when the opening and/or closure of the electronic power component must stop, the passage from one step to the following step in this piloting process being effected automatically as soon as a corresponding condition of passage is satisfied,  
 wherein it comprises the steps consisting in:
  - reading the value of at least one operational parameter characteristic of the reaction of the electronic power component in response to the successive application of said commutation voltages,
  - verifying, thanks to the values read, whether this reaction of the electronic power component is produced in a predetermined imparted time,
  - if so, allowing said piloting process to continue normally, and
  - if not, interrupting said piloting process and immediately triggering off a process for safeguarding the integrity of the electronic power component.
2. The process of Claim 1, wherein at least one condition of passage from one step to the following in said piloting process is a function of the values read for said at least one operational parameter and, in order to verify whether the reaction of the electronic power component is produced in the predetermined imparted time, the process comprises the step consisting in verifying that at least this condition of passage is satisfied before the predetermined imparted time has elapsed.

3. The process of Claim 2, wherein the process comprises the step consisting in verifying that all the conditions of passage between said plurality of steps of said piloting process are satisfied before a predetermined imparted time common to all these conditions of passage has elapsed.

5 4. The process of Claim 3, wherein the common time is counted from the instant when the execution of said piloting process begins, and this common time is representative of a maximum time to effect commutation of the electronic power component.

5. The process of Claim 1, wherein one of the operational parameters read is  
10 the voltage between the collector and emitter electrodes of the electronic power component.

6. The process of Claim 1, wherein one of the operational parameters read is the voltage on the control electrode.

7. The process of Claim 1, wherein one of the steps of said piloting process  
15 consists in controlling the application on said control electrode of a braking voltage adapted to brake commutation of the electronic power component.

8. The process of Claim 7, wherein the value of the braking voltage is strictly included between the values of the voltages for maintaining the electronic power component respectively in the closed state and in the open  
20 state.

9. The process of Claim 7, wherein said piloting process is a process for piloting the closure of the electronic power component and the condition of passage between the step of controlling the application of a braking voltage and the following step is satisfied if the voltage between the collector and emitter  
25 electrodes is less than a first predetermined threshold.

10. The process of Claim 9, wherein the process for piloting the closure of the electronic power component begins by the step of controlling the application of the braking voltage.

11. The process of Claim 7, wherein said piloting process is a process for piloting the opening of the electronic power component and the condition of passage between a preceding step and the step controlling the application of the braking voltage is satisfied if the voltage between the collector and emitter electrodes is higher than a second predetermined threshold.

12. The process of Claim 11, wherein the value of the second threshold corresponds to half the voltage to be commuted.

13. The process of Claim 11, wherein said preceding step is a step for controlling the application of a voltage of value strictly lower than that of the braking voltage.

14. The process of Claim 11, wherein, in the process for piloting the opening of the electronic power component, the condition of passage between the step controlling the application of the braking voltage and a following step is satisfied if the voltage between the collector and emitter electrodes attains a maximum.

15. System for controlling an electronic power component adapted to execute a process for piloting the opening and/or closure of this component, said piloting process containing a plurality of steps for controlling the application of a succession of different commutation voltages on a control electrode of the electronic power component between the instant when said piloting process starts and the instant when the opening and/or closure of the electronic power component must finish, the passage from one step to the following step in this piloting process being automatically effected as soon as a corresponding condition of passage is satisfied,

wherein the system comprises a computer adapted to:

- read the value of at least one operational parameter characteristic of the reaction of the electronic power component in response to the successive application of said commutation voltages,

- verify, thanks to the values read, whether this reaction of the electronic power component is produced in a predetermined imparted time,

- if so, allow said piloting process to continue normally, and

- if not, interrupt said piloting process and immediately trigger off a  
5 process for safeguarding the integrity of the electronic power component.

16. The system of Claim 15, wherein at least one condition of passage from one step of said piloting process to the following is a function of the values read for said at least one operational parameter and, in order to verify whether the reaction of the electronic power component is produced in the predetermined  
10 imparted time, the computer is adapted to verify that at least one condition of passage is satisfied before a predetermined time imparted for this condition of passage has elapsed.

17. The system of Claim 16, wherein the computer is adapted to verify that all the conditions of passage between said plurality of steps of said piloting process  
15 are satisfied before a predetermined imparted time common to all these conditions of passage has elapsed.

18. Data recording support comprising instructions for the execution of the steps of the process for controlling an electronic power component of Claim 1, when said instructions are executed by a computer.